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Drinking water improvement strategies and childhood diarrhea in a poor peri-urban community in the Dominican Republic

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Abstract

Diarrhea is a major cause of morbidity and mortality of children in low- and middle-income countries^{1,2}. Contaminated drinking water is an important contributor to diarrheal illness^{2,3}. Point of use strategies for improving drinking water may be employed^{4,5}, but the extent of use of different strategies and their relationship with childhood diarrhea is inadequately known outside of trial studies. Caregivers of 199 children under the age of five participating in a child growth monitoring program based in a poor peri-urban community in the Dominican Republic agreed to participate in the study. Caregivers were asked a series of drinking water questions at each growth monitoring appointment. Multiple responses per child were adjusted by weighting. Approximately 22% of children had diarrhea within 2 weeks of growth monitoring appointments. The most common water improvement strategy endorsed as "always" used for the child in the last four weeks was bottled water (53%) followed by boiling (12%) and chlorination (6%). No reported strategy use was related to child diarrhea, including when stratified by age. Childhood diarrhea was higher in this community than the national average (14%)⁶. High levels of bottled water use are consistent with high household level reports in the Dominican Republic. The lack of relationship between water improvement strategies and diarrhea was unexpected, although in some cases the strategy may have been implemented in response to childhood diarrhea. Analysis of child drinking water samples is required to assess the effectiveness of reported practices.

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